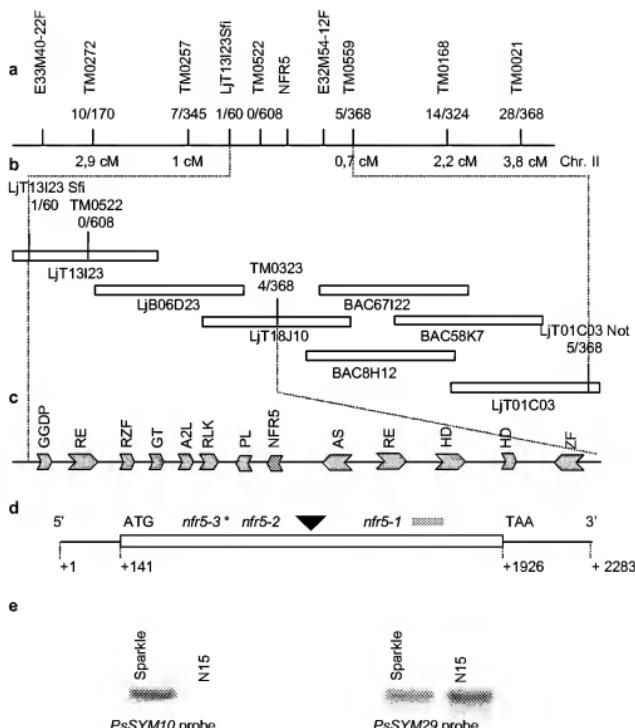


Figure 1



**Figure 2**

**a**



**b**

MAVFFLTSGSLSLFLALTLLFTNIAA	<b>SP</b>
RSEKISGPDFSCPVDSPPSCTETYVT	<b>51 aa</b>
* YTAQSPNLLSLTNISDIFDISPLSIARASNIAGDKKLVPGQ <b>VLLVP</b>	<b>LysM1</b>
VTCCGCAGNHSSANTS	<b>113 aa</b>
YQIQLGDSDYDFVATTLYENLTNWNIHQASNPGVNPYLLPERVKVVFP	<b>LysM2</b>
LFCRCPSKNQLNKGIQYLLIT	<b>180 aa</b>
YVWKPNNDNVSLVSAKFGASPADILTENRYQDFTAATNLPI <b>LIP</b>	<b>LysM3</b>
VTQLPELTQPSSNGRKSSIHLL	<b>246 aa</b>
VILGITLGCTLTLTAVLTGTLVYVYC	<b>TM</b>
RRKKALNRTASSAETADKLI <u>LSGVGYVSKPNVYEIDEI</u>	<b>KD</b>
I MEATKDFSDECKVGESVYKANIEGRVVA <u>AVKKIKEGGANEELKILQKV</u>	
II NHGNLV <u>KLMGVSSGYDGNCFLVY</u> EYAENGSLAEWLFSKSSGTPNS <u>LT</u>	
IV WS <u>QRI</u> SIAVDVAVGLOYM <u>H</u> EHTYPR <u>I</u> I <u>R</u> DITTSN <u>I</u> LL <u>D</u> SNFKAKIA	
V VI <u>A</u> MARTSTNPMMPK <u>D</u> VFAFG <u>V</u> LIELLTGRKAMTTKENGEVVM <u>W</u>	
VII KDMWEI <u>F</u> DIEENRERIRKWM <u>D</u> PNLESFYHIDNALSLASLAVN <u>C</u> TAD	
XI KSLS <u>R</u> PSMAEIV <u>L</u> SL <u>S</u> FLTQ <u>Q</u> SSNPT <u>L</u> ERSLT <u>S</u> SSGLDVEDDAHIV <u>T</u> S	
XI ITAR	<b>595 aa</b>

**Figure 2**

c

NFR5M1	52:YTAQSPNLLSLTNISDIFDISPLSIARASNIDAGKDKLVPGQVLLVP:98
SYM10M1	52:YFARSPNFSLTNISDIFDMSPLSIAKASNIEDEDKKLVEGQULLIP:98
M.tM1	53:YRAQSPNFSLSNISDIFNLSPRIAKASNIEAEDKKLIPDQLLLVP:99
RiceM1	47:YRTOQSPGFLDGLGNISDLFGVSRALIASANKLTTEGVLLPGQPLLVP:93
NFR5M2	114:YQIQLGDSYDFVATTLYENLTNWNIYQASNPGVNEYLLPERVKVVFP:160
SYM10M2	114:YTILKGDNFYFLVSTTSYONLTNVEMENFNPNLSPNLLPPETKVVP:160
M.tM2	115:YSIKQGDNFFILSTSYYONLTNYLEFKNFNPNLSPNLLPLDTKVSVP:161
RiceM2	109:YPIRPRDTFFCLAVIAFENLTDVFVLYELNPAAEATRLEPWQEVVFP:155
VolvoxM2	106:YTIOQPGDTFWAIAQ.R.G..TTVDVIQSLNPGVNPARLQVGQVINYP:149
Pfam	1:YTIVKKQDTLWKIARR.YG..ISVSELKSLN.GLSSDNLVYGQKLKIP:43
NFR5M3	181:YVWKPNNDNVSLLVSAKFCGASPADILTEENRYGQDFTAATNLPILIP:224
SYM10M3	181:YVWQANDNVTIRVSSEKGASQVDMFTEN..NONFTASTNVEILIP:222
M.tM3	182:YVWQDNDNVTLVSSSKFCGASQVEMLAEN..NNHFTASTNRSVLIP:223
RiceM3	176:YVWQPGDDSVSVAWSALMNASAANIAASNGVAGNSTPATGQEVLIP:219

d

	VII	VIII	IX
Cons	...DFG.....	APE.....	D.W.G

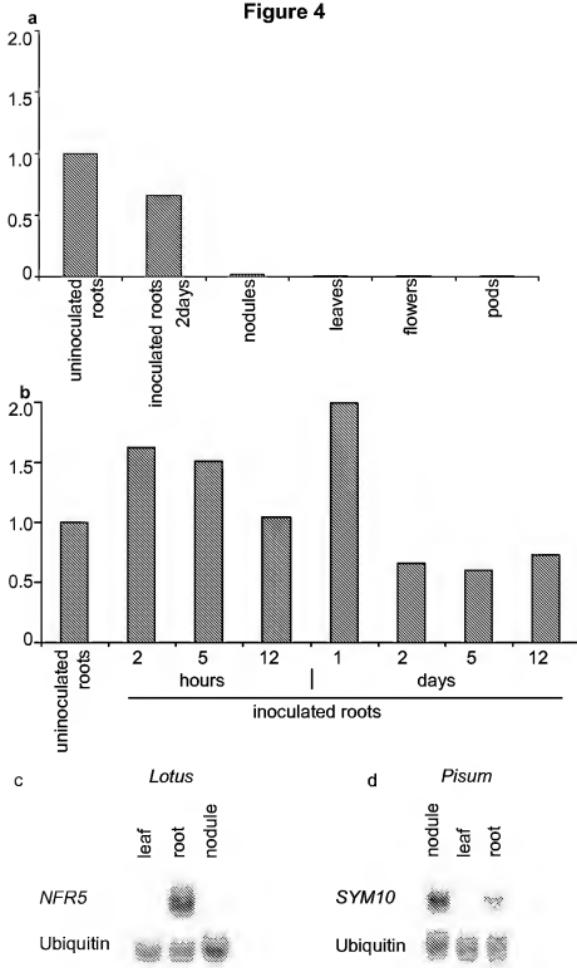
Smart	195: <b>KIADFG</b> LSR..DLYSDYYKVGGKLPPIRWMAPESLKEGKFTSKSDVWSFG:248
Arab	500: <b>KIANFG</b> VARILDEGDLQLTRHVBGTQGYLAPEYVENGVITSKLDVFAPG:550
NFR5	448: <b>KIANFAMARTSTN</b> .....PMMPKIDDVFAPG:472
SYM10	449: <b>KIANFSMARTSTN</b> .....SMMPKIDDVFAPG:473
M.t	450: <b>KIANFGMARTSTN</b> .....SMMPKIDDVFAPG:474
Rice	476: <b>KLSNFSLAKPAA</b> MVD.....AAATSSDVFAPG:502

**Figure 3**

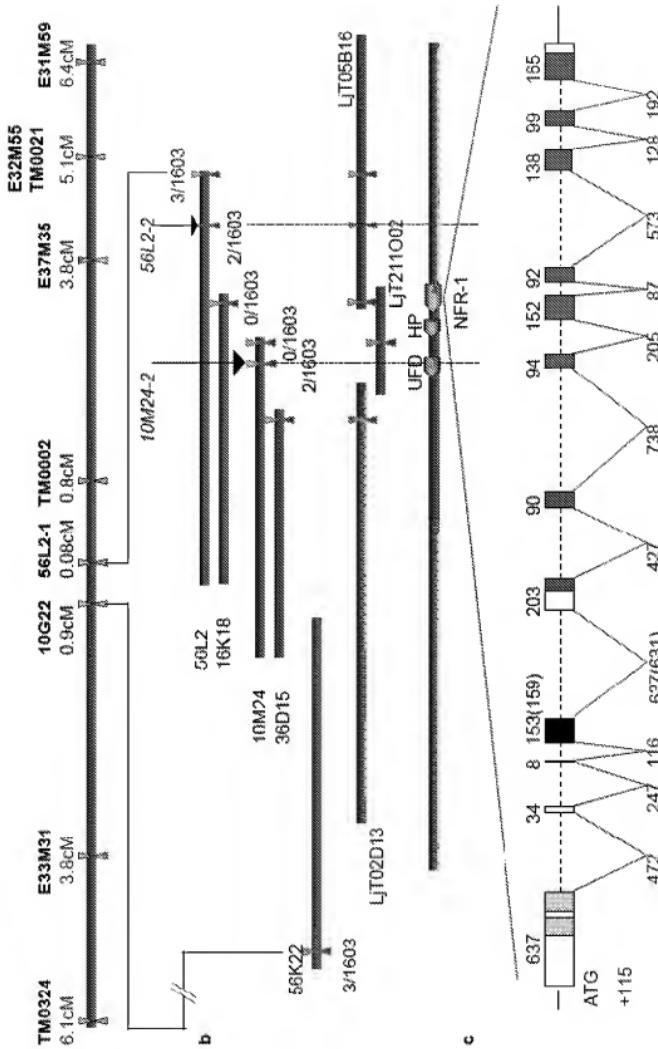


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Figure 4



a      Figure 5



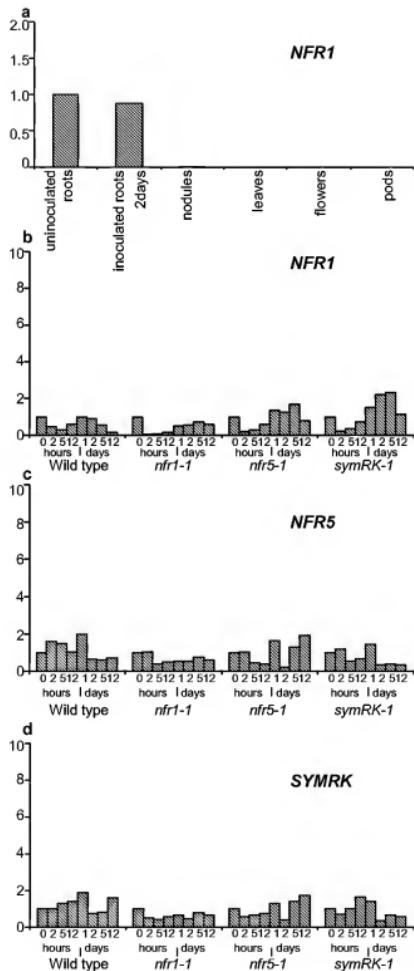
**Figure 6a**

MKLKTGLLLFFILLLGH	SP
VCFHVESNCLKGCDLALASASYILPGVFIQNITTQMSEIVSSNDAITS YNKD KILNDINIQSFSQRLNIPFP <u>CDCIGGEFLGHVF</u> E	103
YSASK <u>GDTYETIANLYYANLT</u> TV DLLKRFNSYDPKNIPVNAKVNVT	<b>LysM1</b>
VNCSCGNSQVSKDYGFLIT	168
<u>YPIRGDTLQDIANQSSLAGLIQSFNPSVNFSKDSGIAFIP</u>	<b>LysM2</b>
GRYKNGVYVPLYHR	224
TAGLASGAAVGISIAGTFVLLLLAFCMYV	<b>TM</b>
RYQKKEEEEAKLPTDISMALSTQD (GN) ASSSAEYETSGSSGPGTASAT GLTSIMVAKSMEFSYQELAKATNN	332 (324)
FSLDNKI <u>GQGGFGAVYYAELRGKKTAIKMDVQASTEFLCE</u> LKVLTHV I II III <u>HHHLNLVRLIGYCVEGSLFLVYEHDINGNLGQYLHGSGKEPLFWSSRVOIA</u> IV V VIa <u>LDAARGLEYIHEHTVPVYIHRDVKSANILIDKNLRGKVADFG</u> LTKLIEVG VIa Vib VII NSTLQTRLV <u>GTFGYMPPEYAQYGDISPKIDDVYAFGVVL</u> FELISAKNAVLKT VIII * IX GELVAESKGLVALFEEALNKSDPCDALRKLVDPRLGENYPIDSVLKIAQLG * RACTRDNP <u>LLRPSMRSLVVALMTLSSLTEDCDDESSYESQLINL</u> LSVR*	KD
XI	621 (623)

**Figure 6b**

SMART0257	<u>YTVKKGDTLSSIARRYGISVS--DLLELNNIILDPDNLQVGQKLKIP-</u>
NFR1-M1	104- <u>YSASKGDTYETIANLYYANLT</u> TV DLLKRFNSYDPKNIPVNAKVNVT--149
At21630-M1	105- <u>YSVRQEDTYERVAISNYANLT</u> MESLQARNPFPATNIPLSATLNVLV-151
SMART 0257	<u>YTVKKGDTLSSIARRYGISVSDLLELN</u> NIILDPDNLQVG1KLKIP
NFR1-M2	167- <u>YPIRGDTLQDIANQSSLAGLIQSFP-SVNFSKDSG--IAFI</u> P-208
At21630-M2	170- <u>YPLRPEDSLSSIARSSGVASIDLQRYNP-GVNFNSGNG--IVYV</u> P-211
BAB89226-M2	168- <u>YAVQDGDTLGNIAASLFRSSWKDILDINPRVANPDFIKPGWILFI</u> P-212
Volvox M	42- <u>YTIQPGDTFWAIAQRRGTTVDVIQSLNP-GVNPARLQVGQVINVP</u> -85

Figure 7



**Figure 8**

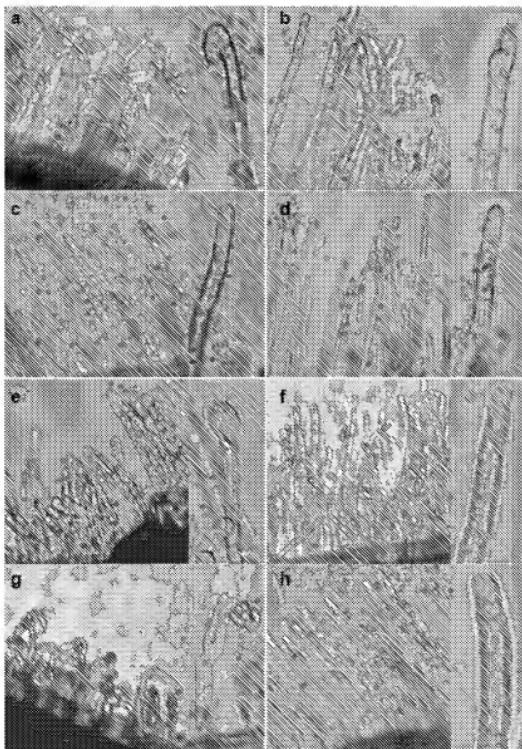


Figure 9

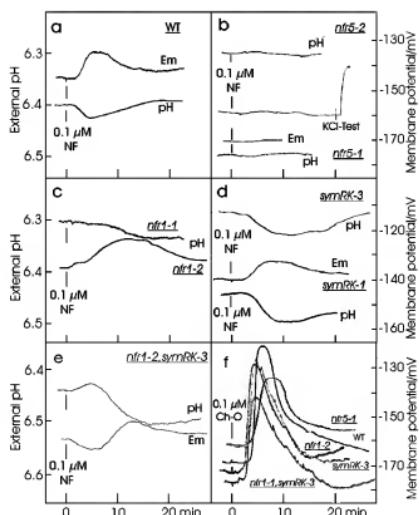
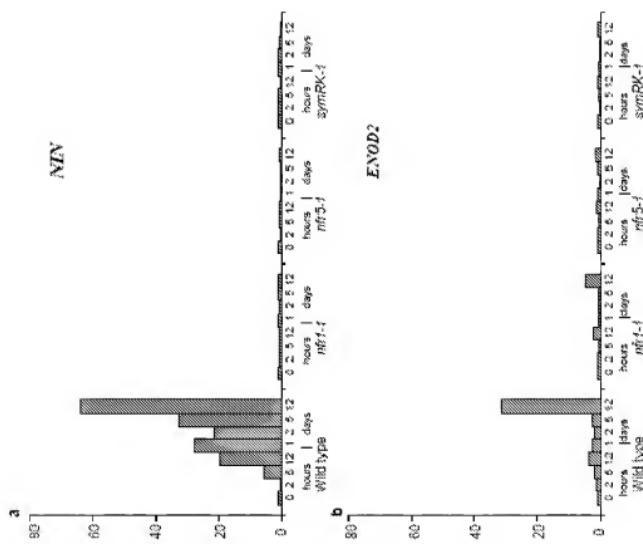


Figure 10



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Figure 11

<p>NFR1 1 : MK .. LKTG LLIFILLIASHCIFYBENCING .. C .. D .. LALASYIL .. . PEFVILQNTTMESEIVSNTDAITSNNDKLLINIOSFPL NFR5 1 : MAVPFPLTSGELSPLATLUTPLTIAAREBKISGDFSCPYDPSFCSETTYTAOSPNLTLNISDIPDISPLSIAS .. . NIDAGK DLYATG . CYL</p> <p>NFE1 65 : NIPPECDCIGGEGTGRVEYSSAKEDTTETANLYTANLTVULLDPFN . GYDPEINSPNATWVNTUNCGCGNS OYSTEYVJFTTYEPRCDLQDAN NFR5 96 : LYPTCSCAHNSANT . STQICLSDIDFVATLYTENINWVASNECNPLLPBKXVPPLECFPSNLQKJQIQLITYWKEPENTSLSVA</p> <p>NFR1 183 : QSLLDAGLIOFSN . PBNVNSKDSGI . AFTPGYNGVYPLHPTAHLASGLAVGJISTAJTIVLLAFCNYVYCKHEECAELETDISMALSTQDASS NFR5 195 : FFGASPDILTENEYQDPTATNLPLIP .. . VT .. . QPLELTOP .. . SNGKS .. . SHLYVLOITLGCTLL . TAYLTOLVVYCRKTMN . RTASS</p> <p>NFE1 281 : SAEYETGSSEGTATGUTSMTWAKSREFSYOELAKATNFSLNKIGOGRJAVNTAELRGKTAIKENDOASTEFLCLEYLTTHYHNLNEVLIG NFR5 283 : ABTADKLLG .. . VSGI .. . VSKFNTIEIDSEMAKTDYSECKVGE .. . VIANIEGEVAVXKID3AN .. . EJK ILQEVNGREVKLG</p> <p>NFR1 381 : YC .. VEGSLPLVIEHIDNGLGAYLG . SGKEP .. LWSSEVIALDAAFGLEYTHEFPVYTHRDYKSAINTLIDRNPKVADPOLTLIBVNSTLQ NFR5 387 : VSSYDUGNCPLVVEAENSLAEMFSESETTPNLYMSEHENTPPLHEDUTSNILLDOSTPAKANFAMR .. . TST ..</p> <p>NFR1 476 : TFLYTGEGMPPEACTGDISKIDVAPFTVLFLLISANAVL . KTGELVNEKGLVALPEELNSDFCDALBLVDPFGENPIDSVYKIMQGR NFR5 489 : .. . NP .. . . . . MPKPDYPAFWL . ELLVGRKAMTPEKNG VYNLAKDWELWU1BENR .. . EERIKWMDRLESFHIDALSASLV</p> <p>NFR1 574 : ACTDNPLRPSMSLVVALMFLASSLTERCDURSSYES .. . . . . OTLNULLSVR</p> <p>NFR5 510 : NCTADESLSRSPMARIYVLSLSTTOSCEPNLTSLSLSDVEDDAHTVTSITR</p>	<p>REPLY TO OFFICE ACTION OF DEC 10 2010 AMDT DATE: FEE 10 2010 PPIN: 10-0531919 SHEET 12 OF 13 REPLY TO OFFICE ACTION OF DEC 28, 2009 AMDT DATE: FEE 10 2009 PPIN: 10-0531919 SHEET 1 OF 13</p>
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**Figure 12**

Protein domain structure of *Lotus japonicus* and *Lotus fisticulus* NFR1 and NFR5 proteins and of the hybrid proteins

